

## 3.1 Finding the Mean

**At a Glance**

PACING  $1\frac{1}{2}$  days

### Mathematical Goal

- Understand the mean as a number that “evens out” or “balances” a distribution

### Launch

Use the Getting Ready to launch Problem 3.1. Have students construct the physical model in small groups by building a stack of cubes for each student’s household. Each stack should be a single color and different from the colors of the other stacks. Have the groups arrange their cube stacks in order from shortest to tallest.

- *What is the median of these data?*
- *What is the mode of these data?*
- *You can find the average of these data by “evening out” the number of cubes in each stack.*

Have the students try this on their own.

- *How many cubes are in each stack?*
- *The average, or “evened out,” height you found equals the mean number of people in a household. What is the mean number of people in a household?*

### Materials

- Transparencies 3.1A, 3.1B
- Cubes (10 each of 6 different colors per pair)

### Explore

As you move around the room, help pairs to understand that they need to build six stacks, one stack for each of the six students, with the numbers of cubes representing the members of each household. Suggest that they build the stacks for each person with the same color cube.

### Materials

- Stick-on notes
- Large sheets of unlined paper

### Summarize

Discuss each of the questions in Problem 3.1, encouraging students to share their strategies for solving the problem. They need to justify their strategies by explaining why what they did works.

Most students will use the strategy of “evening out” the cubes to find the mean, but they may use other strategies as well. These strategies may include showing the mean as a balance point in the distribution using a line plot, or using the standard algorithm of adding up all of the people in each household and dividing that total by the number of households. If the standard algorithm is mentioned as a strategy, ask students to discuss how it is similar to the other strategies of “evening out” the cubes or “balancing” the stick-on notes in the line plot.

### Materials

- Student notebooks

### Going Further

See the extended Summarize section.

## ACE Assignment Guide for Problem 3.1

**Differentiated  
Instruction**  
Solutions for All Learners

Core 1–4

Other Connections 7, 8, 19

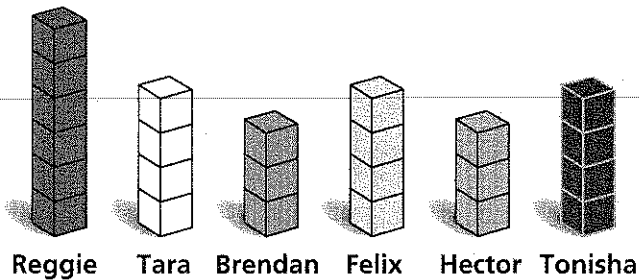
Adapted For suggestions about adapting  
ACE exercises, see the *CMP Special Needs  
Handbook*.

Connecting to Prior Units 7, 8: *Bits and Pieces I*

- B. Possible answers: Use stick-on notes to make a line plot. Then “even out” the notes. Some students may notice in this problem that the mean is the sum of all the people in the households divided by the number of households; or rather, the sum of the data divided by the number of data values.

### Answers to Problem 3.1

A.



1. 24; Possible answer: count the total number of cubes.
2. 4; Possible answer: If you “even out” the stacks, there are four cubes in each stack.
3. The means are the same.